

Outstanding Items & Suggestions from the 4pi Workshop May 15-17, 2005 in Berkeley

May 22, 2005
Revised June 18, 2005

Please send any question or omissions to: kmheeger@lbl.gov

Deployment Procedures (lead: Fred)

- ~~1. Include step to put control panel into "safe mode" during computer control of 4pi system.~~
- ~~2. Removal of cable 2 weight (only a procedural modification).~~

Software (lead: Fred)

- ~~1. Additional dialog box for "Go" button.~~ -> done for z-axis system; consider doing something similar for off-axis mode
- ~~2. Evaluate additional terms to be included in calculation of position of pole: width of pivot block, buoyant forces, weight of cables.~~
3. Change definition of theta_pole to be in Herb's coordinate system, i.e. relative to the vertical rather than the horizontal.
- ~~4. Implement Jordan's watchdog circuit.~~
5. Insert real detector geometry into control program.
6. Adjust serial cables to motor drives so that motor 1 and motor 2 are independent. -> waiting on correct cables
- ~~7. Add feature to disable instrumentation unit readout in case of failure.~~
8. Provide easier access to history information.
9. Write more documentation.

Parts to Order (lead: Andrew)

- ~~1. Manual control panel RP240.~~
- ~~2. Spare motor controller and drive.~~
- ~~3. 2x MDC 450006 + bolts and viton gaskets~~
- ~~4. Double Bubble orange and other epoxy.~~

Instrumentation Unit Redesign and Testing (lead: Lindley)

- ~~1. Obtain padded safe box for shipment of instrumentation units.~~
- ~~2. Redesign lucite enclosure and establish better sealing procedure with epoxy.~~
- ~~3. Test new design of diffuser balls.~~
4. Conduct suite of pressure, mechanical, and electrical tests at LBNL.
- ~~5. Prepare soak tests of epoxy samples.~~
6. Characterize all instrumentations units.

Commissioning Tests at LBNL (lead: Andrew, Fred, Karsten)

1. Complete survey of pole positions when deployed.
2. Can we disengage and turn the lower spool (cable 2) without opening the glovebox?
3. Is the pole deflected off center from the stiffness of the cables? Measure the deflection of the pole when deployed?
4. Additional pole deflection measurements and calculations.

Outstanding Hardware Items (lead: Karsten)

At LBNL

- ~~1. Relocation of limit switch to somewhere that minimizes interference with pole assembly, perhaps with the ability to swing it out of the way for the off-axis mode.~~
2. Modification of anti-rotation pins on pin block to provide more stability.
- ~~3. Addition of location to store weighted segment on pole hanging rack.~~
- ~~4. Back-cutting of upper pulley mounting bracket to allow the IU connector to clear.~~
5. Weld pins on cable 2 attachment segment. -> double check
- ~~6. Flexible source cage.~~
7. Capture screw on pivot block.
8. Design enclosure for chimney cameras
9. Mockup of bird cage opening -> in progress
10. Complete cable marking
11. Nylon covers for D-sub connectors in glove box. -> in progress
- ~~12. Viton gaskets for ports and motor cover.~~
13. Shaft seal for clean tent ceiling.
14. Cable conduit inside penthouse.
15. Deployment holder for 4 instrumentation units.

Before shipment to Japan

1. Weld motor power feedthroughs into drive plate.
2. Attachment for glove box CCD camera in penthouse.

On-Site

1. Weld axial support to penthouse.

On-Site Preparations (lead: Karsten)

1. Do we need additional clearance measurements for the 4pi chimney cameras?
2. We may want to double-check the bolt pattern of the glovebox/penthouse interface.

On-Site Soak tests and counting (lead: Karsten)

1. MDC window for chimney cameras.
- ~~2. Extra cable samples.~~
- ~~3. Soak tests of epoxy and Lucite-nylon and Lucite-stainless joints.~~

Documentation (lead: Karsten)

- 1.Complete set of drawings.
- ~~2.Document for fire station.~~
- 3.Deployment procedures.
- 4.Cabling document.
- 5.Revise commissioning plan.

Cleanliness

1. How do we clean the clevis pins with the spring loaded ball?

Other Questions & Suggestions

- 1.Have we observed any work hardening of cable during LS soak?
- 2.What about the radon permeability of lucite windows?
- ~~3.Is the strength of the pole affected by extra holes in each pole segment?~~
- 4.Should have additional nylon lanyard for in-pole source pins.
- ~~5.What about fire safety of D-sub connectors in glovebox.~~
- 6.Should have cable marking: near top of retraction, at all pivot block locations, and at regular intervals.
- 7.Should have cable marking that indicates when pole is horizontal.
- 8.We may want to try imaging an object at the detector center with the spotlights on with the CCD cameras.